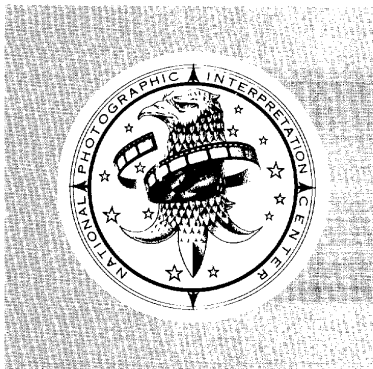




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**BASIC IMAGERY
INTERPRETATION
REPORT**

**NATIONAL PHOTOGRAPHIC
INTERPRETATION CENTER**

**ISTRA NAVAL RADIO
COMMUNICATIONS TRANSMITTER STATION**



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DEPLOYED COMMO/ELEC/RADAR FACILITIES

USSR

DECEMBER 1971

Declass Review by NIMA/DOD



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Installation or Activity Name		UR
Istra Naval Radio Communications Transmitter Station		
UTM COORDINATES	GEOGRAPHIC COORDINATES	
NA	55-53-03N 036-57-13E	
MAP REFERENCE		
8th RTS. USATC 200, Sheet 0167-4HL, scale 1:200,000		

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ABSTRACT

1. The Istra Naval Radio Communications Transmitter Station, which is a major naval high-frequency (HF) broadcast facility serving the Soviet Naval Headquarters in Moscow, may also be the alternate command post for the naval headquarters. Significant features of the Istra station include three VEE CONE antennas, 14 tower-mounted probable cage dipole antennas, and two large earth-covered control bunkers.

2. This report contains a location map, annotated photographs, and mensural data on buildings and antennas.

INTRODUCTION

3. The Istra Naval Radio Communications Transmitter Station is situated 23 nautical miles (nm) northwest of Moscow and 3.0 nm southeast of the town of Istra, USSR (Figure 1). The transmitter station is at an elevation of 182.9 meters (600 feet) above mean sea level.

4. The Istra facility is similar to nine other Soviet land-based naval HF communications facilities which are reportedly associated with naval command and control. Each facility contains a hardened control area and a large antenna field with seaward-oriented antennas.

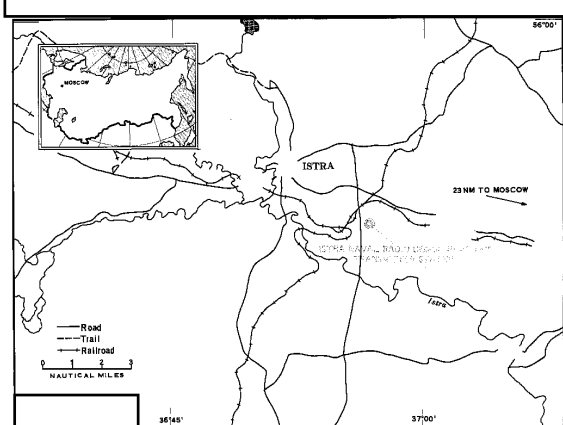


FIGURE 1. LOCATION MAP

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5. The Istra Naval Radio Communications Transmitter Station is a major HF broadcast facility serving the Soviet Naval Headquarters in Moscow. It consists of an antenna field, a centrally located hardened control area, and a secured support area (Figures 2 and 3 and Tables 1-4). The station was first observed under construction [redacted] when excavations were visible near the control and support areas. On photography [redacted] the control area appeared to be complete, and probable tower-mounted cage dipole antennas had been installed in the antenna field [redacted] the facility appeared to be externally complete and was probably operational.

Antenna Field

6. The hexagonal antenna field is secured by a single perimeter fence and contains three VEE CONE antennas, 14 tower-mounted probable cage dipole antennas, three quadrant antennas, nine horizontal dipole antennas, one unidentified mast, and 11 tuning buildings.

7. The identification of VEE CONE antennas (see Figure 3) at the Istra station is further evidence of its naval association. VEE CONEs are primarily shipborne antennas and have been used extensively in shipborne long-range HF communications.³ Land-based VEE CONEs have been identified at only three facilities, all with a naval association. The Istra station is the third naval shore location where VEE CONE antennas have been seen deployed.⁴

8. The three VEE CONE antennas at Istra are oriented toward the Northern and Baltic Fleet areas. However, they have omnidirectional radiation characteristics, which makes it difficult to define their azimuthal coverage.

9. The 14 tower-mounted probable cage dipole antennas provide a capability for long-range broadcast coverage of the four Fleet areas (Figure 4). These antennas are arranged in two semicircular arrays and are paired for frequency diversity. A tuning building is positioned near each pair, indicating that, as at other facilities serving Fleet areas, Istra will be capable of broadcasting on an extended range of frequencies.

10. Six of the nine horizontal dipole antennas are also arranged semicircularly. Their azimuths form an arc covering the Mediterranean and Black Sea areas (see Figure 4).

11. A security/gate house, a probable operations building, and a dog kennel are near the northeastern edge of the antenna field near the main entrance to the area.

Control Area

12. The control area contains a pair of large earth-covered arched-roof bunkers, two partially buried fuel storage tanks, and a small fenced unidentified building.

13. The two bunkers are parallel and of unequal length. To date, bunkers of this type have been seen only at the Istra station and four other naval communications facilities. One of these facilities, the Bakhchisaray Naval Radio Communications Receiver Station [redacted] is the alternate command post for the Black Sea Fleet¹ and houses facilities for this function in two such bunkers. Although the bunkers at the three other facilities and at Istra cannot be shown to house alternate command posts, the bunkers do provide more space than is needed solely for communications and therefore could fulfill this function. The Istra station,⁵ by reason of its proximity to the naval headquarters, may serve as the alternate command post for the headquarters.

14. The shorter bunker probably houses the transmitters, as indicated by antenna feed stakes which lead from this bunker to the antennas. The absence of feed stakes at the longer bunker probably indicates that it is used for command personnel. Two self-supporting lattice towers are on either side of the pair of bunkers. The function of the towers is undetermined; no antennas of any type can be identified on them. A third self-supporting lattice tower (item 14, Figure 3), on which two probable microwave antennas are mounted, is near the side entrance to the shorter bunker. The size, type, or orientation of the probable microwave antennas cannot be determined. A probable elevated waveguide extends from the side of the shorter bunker to the base of this tower.

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Table 2. Data on Tower-mounted Probable Cage Dipole Antennas at Istra Transmitter Station
(Item numbers are keyed to Figure 3)

Item	Dimensions (Meters/Feet)*			Initial Great Circle Bearing (Degrees)**	Probable Correspondent
	L	W	H		
40 a					Pacific Ocean Fleet
b					Pacific Ocean Fleet
41 a					Pacific Ocean Fleet
b					Pacific Ocean Fleet
42 a					Pacific Ocean Fleet
b					Pacific Ocean Fleet
43 a					Northern Fleet
b					Northern Fleet
44 a					Northern Fleet
b					Northern Fleet
45 a					Baltic Sea Fleet
b					Baltic Sea Fleet
46 a					Black Sea Fleet
b					Black Sea Fleet

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Table 1. Dimensions of Structures in Antenna Field and Support Area at Istra Transmitter Station
(Item numbers are keyed to Figure 2)

Item	Description
1	Storage bldg
2-4	Support bldgs
5	Support bldg
6	Storage bldg
7-8	Support bldgs
9	Bldg ucon
10	Bldg ucon
11	Support bldg
12	Support bldg
13	Storage bldg
14	Support bldg
15	Storage bldg
16	Barracks
17	Vehicle shelter
19 & 20	Storage bldgs
21	Barracks
22	Support bldg
23	Heating/stream plant
24	Prob storage bunker
25	Support bldg
26	Storage bldg
27	Administration bldg
28	Storage bldg
29	Pumphouse
30	Security/gate house
31	Prob operations bldg
32-35	Tuning bldgs
36	Tuning bldg
37	Tuning bldg
38	Tuning bldg
39	Unidentified mast

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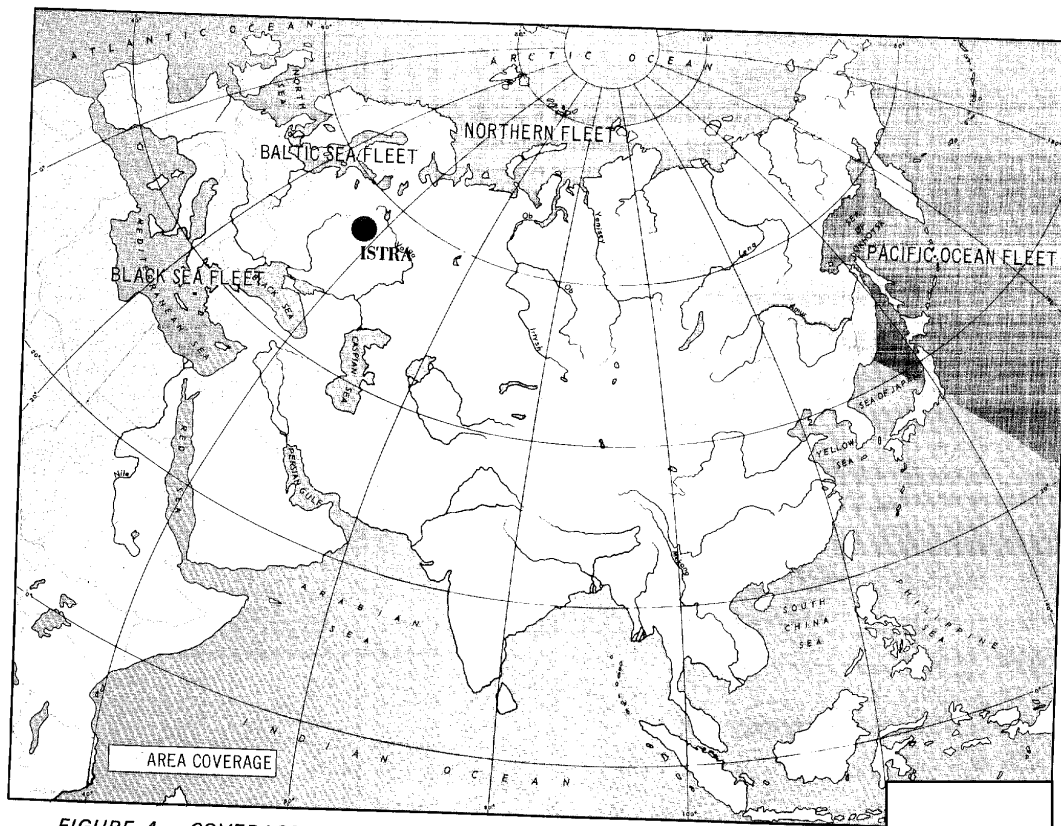
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FIGURE 4. COVERAGE BY HORIZONTAL DIPOLE AND PROBABLE CAGE DIPOLE ANTENNAS AT ISTRA TRANSMITTER STATION. THESE PRIMARY ANTENNA ARRAYS PROVIDE COMMUNICATIONS COVERAGE OF THE FOUR SOVIET NAVAL FLEET AREAS.

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15. The perimeter fencing along the western edge of the antenna field is of solid construction [redacted]. Its function is probably to prevent ground-level observation of the control area from the adjacent road and railway.

Support Area

16. The support area, which is on the east and northeast side of the antenna field, contains 11 support buildings, two buildings under construction, two vehicle shelters, two barracks, one heating/steam plant, one probable storage bunker, and one administration building.

17. Power is supplied by a buried cable extending to the control area from an electrical substation 0.3 nm west of the facility. Water is supplied to the control area from a holding pond and a masonry water tower.

18. A T-shaped concrete pad, two buried tanks, a probable concrete helicopter pad, and a possible runway under construction are in a secured area adjacent to the north side of the antenna field.

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REFERENCES

MAPS OR CHARTS

8th RTS. US Air Target Chart, Series 200, Sheet 0167-4HL, scale 1:200,000

DOCUMENTS

1. NPIC. [redacted] *Bakhchisaray Radio Communications Receiver Station Naval and Sevastopol Radio Communications and Broadcast Transmitter Station* 9, Sep 71 (TOP SECRET [redacted])
2. NPIC. [redacted] *Koryaki HF Communications Facility*, Mar 71 (TOP SECRET [redacted])
3. CIA. [redacted] *No 587, Soviet VEE CONE and VEE TUBE Antennas for Ship Communications*, Oct 70 (SECRET [redacted])
4. NPIC. [redacted] *Mezdurechye Naval Radio Communications Transmitter Station*, Oct 71 (TOP SECRET [redacted])
5. DIA. [redacted] *Soviet Strategic Naval Command and Control Systems* (title UNCLASSIFIED), Jun 71 (TOP SECRET [redacted])

REQUIREMENT

COMIREX C04
NPIC/IEG/MSD/DMEB Project 222211

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